

Pingyue Zhang

633 Clark St, Evanston, IL 60208

Phone: +1 8723256512 | Email: pingyuezhang2029@u.northwestern.edu | Website: <https://williamzhangsju.github.io/>

Research Interest

Multi-modal Learning, Large Language Model, Spatial Reasoning

Education

Ph.D., Computer Science, Northwestern University, IL, USA

Sept 2024 - present

- Supervisor: Prof. Manling Li

M.Eng., Computer Science, Shanghai Jiao Tong University, Shanghai, China

Sept 2021 - Mar 2024

- Grades (Cumulative GPA): 3.88/4.0
- Supervisor: Prof. Mengyue Wu

B.Eng. (Honor), Computer Science (IEEE Honor Class), Shanghai Jiao Tong University, Shanghai, China

Sept 2017 - June 2021

- Grades (Cumulative Scores): 90/100, Ranking: 11/84

Honor & Awards

Scholarship

- Zhiyuan College Honors Scholarship (top 5%, RMB 5000 per year, 2017 - 2021)
- HYPERGRYPH Scholarship (RMB 5000, Sept 2022)

Travel Grant

- SIGMM Travel Grants for ACM MM 2021 (\$1000)

Competition

- Silver medal in IBM Call For Code Competition, Shanghai (RMB 10000, July 2019)

Research Experience

PhD at Northwestern University (Advised by Prof. Manling Li)

Sept 2024 - Present

• First-year PhD student in Computer Science.

- Introduced a large-scale conflict event dataset, along with novel approaches for abstractive event extraction (AEE) and abstractive entity linking (AEL).
- Developed RAGEN, a framework that extends Reinforcement Learning to train LLM Reasoning Agents in stochastic, multi-turn interactions.
- Developed VAGEN, a multi-turn reinforcement learning framework designed specifically for training vision-language model (VLM) agents.
- Working on evaluating and enhancing spatial ability of foundation models.

Research in Shanghai Jiao Tong University X-LANCE LAB (Directed by Prof. Mengyue Wu)

Sept 2019 - Mar 2024

- Automatic detection of disease like depression or Parkinson based on audio or text data.
- Enhance the contrastive learning method to improve classification performance.
- Zero-shot learning.

Publications

What Lies Beyond the View? Actively Constructing Spatial Beliefs in Foundation Models.

Pingyue Zhang*, Zihan Huang*, Yue Wang*, Jieyu Zhang*, Letian Xue, Zihan Wang, Qineng Wang, Keshigeyan Chandrasegaran, Ruohan Zhang, Yejin Choi, Ranjay Krishna, Jiajun Wu, Li Fei-Fei, Manling Li. (Under submission)

Ragen: Understanding self-evolution in llm agents via multi-turn reinforcement learning.

Zihan Wang*, Kangrui Wang*, Qineng Wang*, **Pingyue Zhang***, Linjie Li*, Zhengyuan Yang, Xing Jin, Kefan Yu, Minh Nhat Nguyen, Licheng Liu, Eli Gottlieb, Yiping Lu, Kyunghyun Cho, Jiajun Wu, Li Fei-Fei, Lijuan Wang, Yejin Choi, Manling Li. (Arxiv)

Best Poster Award at MMLS 2025 (Midwest Machine Learning Symposium)

Spatial Mental Modeling from Limited Views.

Baiqiao Yin*, Qineng Wang*, **Pingyue Zhang**, Jianshu Zhang, Kangrui Wang, Zihan Wang, Jieyu Zhang, Keshigeyan Chandrasegaran, Han Liu, Ranjay Krishna, Saining Xie, Manling Li, Jiajun Wu, Li Fei-Fei. (Arxiv)

Spotlight at ICCV Workshop on Embodied Spatial Reasoning

VAGEN: Reinforcing World Model Reasoning for Multi-Turn VLM Agents.

Kangrui Wang*, **Pingyue Zhang***, Zihan Wang*, Yaning Gao*, Linjie Li*, Qineng Wang, Hanyang Chen, Chi Wan, Yiping Lu, Zhengyuan Yang, Lijuan Wang, Ranjay Krishna, Jiajun Wu, Li Fei-Fei, Yejin Choi, Manling Li. (Neurips 2025)

LEMONADE: A Large Multilingual Expert-Annotated Abstractive Event Dataset for the Real World.

Sina J Semnani, **Pingyue Zhang**, Wanyue Zhai, Haozhuo Li, Ryan Beauchamp, Trey Billing, Katayoun Kishi, Manling Li, Monica S Lam. (ACL 2025 Findings)

Multi-Label Supervised Contrastive Learning.

Zhang, P., & Wu, M. (2024). (AAAI 2024)

Depa: Self-supervised audio embedding for depression detection. In Proceedings of the 29th ACM international conference on multimedia (pp. 135-143).

Zhang, P., Wu, M., Dinkel, H., & Yu, K. (2021, October). (ACMMM 2021)

Open-source projects

- Ragen: Understanding self-evolution in LLM agents via multi-turn reinforcement learning. [Github Repo]
- VAGEN: Reinforcing World Model Reasoning for Multi-Turn VLM Agents. [Github Repo]